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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,439	08/07/2006	Taisei Suemitsu	294601US2PCT	8392
22850 7590 06/03/2010 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER HAIDER, SYED				
ART UNIT		PAPER NUMBER		
2611				
NOTIFICATION DATE		DELIVERY MODE		
06/03/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/588,439

Applicant(s)

SUEMITSU ET AL.

Examiner

SYED HAIDER

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This action is in response to the Amendment filed on 04/01/2010. Claims 1-7, are pending with claim 1, and 7, are being further amended.

Response to Arguments

2. Applicant's arguments with respect to claims 1-7, have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6 and claim 7, are rejected under 35 U.S.C. 103(a) as being unpatentable over Filipovic (US PGPub # 2004/0120421) and further in view of Yamamoto (US PGPUB 2005/0123079 A1).

5. As per claim 1, and claim 7, Akiyama discloses a wireless apparatus comprising:

a mixer (Filipovic, Fig. 1:14, paragraph 32) to convert a frequency of a received signal (Filipovic, Fig. 1:14, paragraph 27 and 32);

an analog filter (Filipovic, Fig. 1:16) for filter the received signal (Filipovic, Fig. 1:16, paragraph 28) whose frequency has been converted by said mixer (Filipovic, Fig. 1:14, paragraph 27); an analog-to-digital converter (Filipovic, Fig. 1:18) to convert the received analog signal filtered by said analog filter into a digital signal (Filipovic, Fig. 1:18);

a digital filter (Filipovic, Fig. 1:20) having a band limiting characteristic which is inverse to that of said analog filter with respect to an ideal filter (Filipovic, Fig. 1:16), to filter the digital signal into which the received signal has been converted by said analog-to-digital converter (Filipovic, Fig. 1:18); and

a digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) to disable the filtering of the digital signal (Filipovic, paragraph 22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported) that the filtering by said digital filter (Filipovic, Fig. 1:20) will increase distortion of the received signal (Filipovic, Fig. 1:20, paragraph 39).

Filipovic does not explicitly disclose when determining directly from non-linearity of a power level or an amplitude level of the received signal.

Yamamoto discloses when determining directly from non-linearity of a power level or an amplitude level of the received signal (Yamamoto, Fig. 1:17, pre-adjusting unit, which determines and adjust an amplitude level of the received signal).

At the time of the invention it would have been obvious to one ordinary skill in the art to modify Filipovic teachings by determining an amplitude level of the received signal, as taught by Yamamoto.

The motivation would be to provide an improved receiver capable of stabilizing the multipass removal filter and thus ensuring an acceptable reception performance, as taught by Yamamoto.

6. As per claim 6, Filipovic in view of Yamamoto further discloses the wireless apparatus according to Claim 1, wherein said digital filter includes an output selecting unit to select (Filipovic, Fig. 1:20) and output the received signal which has been filtered by said digital filter (Filipovic, Fig. 1:20) or the received signal which has not been filtered by said digital filter according to enabling or disabling control of the filtering of the digital signal (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported) by said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter).

7. Claims 2-5, are rejected under 35 U.S.C. 103(a) as being unpatentable over Filipovic (US PGPub # 2004/0120421) and further in view of Yamamoto (US PGPUB 2005/0123079 A1) and further in view of Nakamura (US PGPub # 2002/0176364).

8. As per claim 2, Filipovic in view of Yamamoto further discloses the wireless apparatus according to Claim 1, wherein said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) includes which said digital filter control unit uses when disabling the filtering of the digital signal (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported) by the digital filter (Filipovic, Fig. 1:20),

Filipovic in view of Yamamoto does not disclose receive level detector to detect the receive level of the received signal, a threshold storage unit to store a receive level threshold.

Nakamura discloses a receiver level detector to detect (Nakamura, Fig. 1:5, and further in paragraph#47, it explains that the radio frequency signal receiving unit 5 in accordance with the present embodiment has a function of measuring the signal levels of the radio frequency signals as received and outputting measurement results to the signal level storing unit 9) and a level comparison unit (Nakamura, Fig. 1:8).

according to a comparison between the receive level detected (Nakamura, paragraph#54, explains that the threshold level comparing unit 8 reads out the threshold level stored in the threshold level storing unit 10, extracts the carrier numbers corresponding to the signal levels (the result of the operation) within the range determined by the threshold level (for example, the signal levels exceeding or falling

under the threshold level) by comparing the threshold level as read with the result of the operation received from the calculation result storing unit 6, and then outputs the carrier numbers as extracted to the carrier number storing unit 7) by said receive level detector (Nakamura, Fig. 1:5) and the receive level threshold stored in said threshold storage unit (Nakamura, Fig. 1:10).

At the time of the invention it would have been obvious to one ordinary skill in the art to modify Akiyama in view of Filipovic teachings by implementing the radio frequency signal receiving unit and threshold level comparing and storing unit to the wireless communication system, as taught by Nakamura.

The motivation would be to provide a wireless communication system which relates to an interference detection method and an interference avoidance system for detecting interference with another wireless communication device and effectively avoiding the interference, as taught by Nakamura.

9. As per claim 3, Filipovic in view of Yamamoto further in view of Nakamura discloses the wireless apparatus according to Claim 2, wherein said threshold storage unit stores (Nakamura, Fig. 1:10), as the receive level threshold which said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) uses when disabling the filtering of the digital signal by said digital filter (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported), a linear receive level high limit of the received signal (Nakamura, Fig. 1:8, which determines

high or low limit of the received signal) which is influenced by an analog unit (Filipovic, Fig. 1:16) including the mixer (Filipovic, Fig. 1:14), the analog filter (Filipovic, Fig. 1:16), and the analog-to-digital converter (Filipovic, Fig. 1:18).

10. As per claim 4, Filipovic in view of Yamamoto further in view of Nakamura discloses the wireless apparatus according to Claim 2, wherein said threshold storage unit stores (Nakamura, Fig. 1:10), as the receive level threshold (Nakamura, Fig. 1:8) which said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) uses when disabling the filtering of the digital signal (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported) by said digital filter (Filipovic, Fig. 1:20), a linear receive level low limit of the received signal (Nakamura, Fig. 1:8, which determines high or low limit of the received signal) which is influenced by an analog unit including the mixer (Filipovic, Fig. 1:14), the analog filter (Filipovic, Fig. 1:16), and the analog-to-digital converter (Filipovic, Fig. 1:18).

11. As per claim 5, Filipovic in view of Yamamoto further in view of Nakamura discloses the wireless apparatus according to Claim 2, wherein said threshold storage unit stores (Nakamura, Fig. 1:10), as the receive level threshold (Nakamura, Fig. 1:8) which said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) uses when disabling the filtering of the digital signal by said digital filter

(Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported), a linear receive level high limit (Nakamura, Fig. 1:8, which determines high or low limit of the received signal) and a linear receive level low limit of the received signal (Nakamura, Fig. 1:8, which determines high or low limit of the received signal) which is influenced by an analog unit including the mixer (Filipovic, Fig. 1:16), the analog filter (Filipovic, Fig. 1:16), and the analog-to-digital converter (Filipovic, Fig. 1:20).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SYED HAIDER whose telephone number is (571)270-5169. The examiner can normally be reached on Monday thru Friday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. H./
Examiner, Art Unit 2611

/David C. Payne/
Supervisory Patent Examiner, Art Unit 2611